988-2

Coal - Underground Fatalities Second Half - 1988

U.S. Department of Labor
Mine Safety and Health Administration

ABSTRACTS WITH ILLUSTRATIONS

ANALYSIS AND SUGGESTED USES

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INTRODUCTION

The 1988 Fatal Illustration Program is divided into four large categories or subject areas. These categories are underground coal mining; surface coal mining; underground metal/nonmetal mining; and surface metal/nonmetal mining.

The materials in this unit include illustrated abstracts (summaries) of all chargeable underground coal mining fatalities for the second six months of 1988 accompanied by 35mm slides, and a statistical analysis of the accidents in that category.

The analysis section retains the same format used in past years. This package of materials, through its abstracts, slides and statistics, has been an effective training tool for the mining industry, especially small mines. This program has been used by various companies in safety meetings, annual refresher training, new miner training, and task training.

Each year, we attempt to improve our Fatal Illustration Program based on comments received from the mining industry. In response to suggestions received on our 1987 Program, the second half of the 1988 Fatal Illustration Program is now available on videotape.

Since a large percentage of the 1988 fatalities were classified as powered haulage and several victims were contractor employees, the Academy is developing separate fatal illustration programs covering these two areas. These two programs are also available from the Academy at no cost.

How Companies Use the Fatal Illustration Program

Many mining companies use the Fatal Illustration Program to train supervisory and nonsupervisory personnel. The abstracts, slides and statistics readily lend themselves to group safety training, new miner training, and task training.

Following are quotations from various mining companies and organizations that use this material in their training programs:

"These programs have been an excellent addition to our annual refresher classes, prompting excellent discussions from the men attending."
Mine Safety Service

"We find this to be excellent material for teaching accident prevention and hazard awareness."
Industrial Education Corp.

"This program is the best yet by showing the way accidents, injuries, and death happen and the ways of prevention."
Silver Buckle Coal Corp.

"These slides are excellent in depicting dangers to students who will soon be employed in the industry. They make a lasting impression."
West Virginia University,
Mining Engineering

"I want you to know that these slides of real world accidents open the eyes of our students to what the real world can be like. The old adage of 'a picture is worth a thousand words' truly applies."
Colorado School of Mines

Fatalities - Underground Coal Mines - Second Half 1988

Statistical Analysis

Thirteen fatal accidents occurred at underground coal mines during July through December 1988.

Victim's Experience

- Approximately 47 percent of the victims were less than 30 years old.
- Approximately 47 percent of the victims had less than one year's experience on the job they were doing when they were fatally injured.

Accident Classification

- Powered haulage accidents were responsible for approximately 47 percent of the fatalities.
- Roof falls accounted for an additional 23 percent and machinery accounted for 16 percent of all second half underground fatalities.

Victim's Occupation

- Laborers accounted for approximately 30 percent of the fatalities.
- Roof bolter operators and scoop operators each accounted for an additional 16 percent of the second half underground fatalities.

Mine Size

- Approximately 77 percent of all second half fatalities occurred at large mines (20 or more employees).

Fatalities by Victim's Age
Underground Coal 1988

This Table Shows Fatalities by Age of Victim

First Half 1988

Age (Years)	Number of Fatalities
18-20	1
21-25	1
26-30	1
31-35	6
36-40	2
41-45	1
46-50	5

Second Half 1988

Age (Years)	Number of Fatalities
26-30	6
31-35	2
36-40	2
41-45	1
51-55	1
60+	1

Fatalities by Victim's Experience
Underground Coal 1988

This Table Shows Fatalities by Victim's Experience

First Half 1988

Experience (Years)	Mining Experience	Job Experience	Experience This Mine
0 - 6 mos.	-	5	4
6 mos.-1 yr.	1	3	3
1 - 2 yrs.	1	1	2
2 - 3 yrs.	-	2	-
4 - 5 yrs.	-	1	1
5 - 6 yrs.	1	-	-
7 - 8 yrs.	-	-	2
9 - 10 yrs.	1	-	-
10 - 11 yrs.	2	1	1
11 - 12 yrs.	1	1	2
12 - 13 yrs.	-	1	-
13 - 14 yrs.	2	1	-
14 - 15 yrs.	1	1	-
15 - 16 yrs.	3	-	-
17 - 18 yrs.	1	-	-
21 - 22 yrs.	-	-	1
24 - 25 yrs.	1	-	1
25 - 30 yrs.	2	-	-

Second Half 1988

Experience (Years)	Mining Experience	Job Experience	Experience This Mine
0 - 6 mos.	-	5	4
6 mos. - 1 yr.	-	1	2
1 - 2 yrs.	-	2	1
2 - 3 yrs.	1	1	1
3 - 4 yrs.	-	1	1
4 - 5 yrs.	1	-	-
5 - 6 yrs.	1	-	-
6 - 7 yrs.	1	-	-
7 - 8 yrs.	2	1	-
9 - 10 yrs.	-	1	2
10 - 11 yrs.	1	-	-
13 - 14 yrs.	1	-	-
14 - 15 yrs.	1	-	-
16 - 17 yrs.	1	-	1
18 - 19 yrs.	1	-	-
19 - 20 yrs.	-	1	1
23 - 24 yrs.	1	-	-
25 - 30 yrs.	1	-	-

Fatalities by Accident Classification
Underground Coal 1988

This Table Shows Fatalities by Accident Classification

Classification	Fatalities (1st Half '88)	Fatalities (2nd Half '88)	Fatalities (Total '88)
Roof Fall	5	3	8
Machinery	5 (2 supv.)	2	7
Powered Haulage	3	6	9
Explosives	2	-	2
Electrical	1	-	1
Exploding Vessel	1 (supv.)	-	1
Other - Heart Attack	-	1 (supv.)	1
Fall of Highwall	-	1	1

Fatalities by Victim's Occupation
Underground Coal 1988

This Table Shows Fatalities by Victim's Occupation

Occupation	Fatalities (1st Half '88)	Fatalities (2nd Half '88)	Fatalities (Total '88)
Continuous Miner Helper	3	-	3
Continuous Miner Operator	-	1	1
Roof Bolter Operator	3	2	5
Supervisor	3	1	4
Laborer	2	4	6
Mechanic/Electrician	2	-	2
Drill Operator	1	-	1
Mechanic	1	-	1
Pumper/Electrician	1	-	1
Scoop Operator	1	2	3
Truck Driver	-	1	1
Motorman	-	1	1
Shuttle Car Operator	-	1	1

Fatalities by Mine Size
Underground Coal 1988

This Table Shows Fatalities by Size of Mine

Mine Size	Fatalities (1st Half '88)	Fatalities (2nd Half '88)	Fatalities (Total '88)
Small*	4	3	7
Large**	13	10	23

* Less than 20 employees
** 20 or more employees

Fatalities by Location
Underground Coal 1988

This Table Shows Fatalities by Location of Accident

Location	Fatalities (1st Half '88)	Fatalities (2nd Half '88)	Fatalities (Total '88)
Surface of Underground	2	3	5
Underground	15	10	25

SLIDE INDEX

Fatalities by Occupation
Underground Coal - Second Half 1988

You will find fatalities that happened to:

CONTINUOUS MINER OPERATORS on slide 26

LABORERS on slides 19, 23, 29, and 30

MOTORMEN on slide 22

ROOF BOLTER OPERATORS on slides 25 and 28

SCOOP OPERATORS on slides 21 and 27

SHUTTLE CAR OPERATORS on slide 24

SUPERVISORS on slide 31

TRUCK DRIVERS on slide 20

Fatalities by Accident Classification
Underground Coal - Second Half 1988

You will find:

FALL OF HIGHWALL fatalities on slide 30

MACHINERY fatalities on slides 28 and 29

POWERED HAULAGE fatalities on slides 19, 20, 21, 22, 23, and 24

ROOF FALL fatalities on slides 25, 26, and 27

OTHER - HEART ATTACK fatalities on slide 31

SLIDE INDEX

Fatalities by Location of Accident
Underground Coal - Second Half 1988

You will find fatalities that happened at:

SURFACE OF UNDERGROUND on slides 19, 20, and 30

UNDERGROUND on slides 21, 22, 23, 24, 25, 26, 27, 28, 29, and 31

Fatalities by Mine Size
Underground Coal - Second Half 1988

You will find fatalities that happened at:

SMALL MINES* on slides 19, 27, and 31

LARGE MINES** on slides 20, 21, 22, 23, 24, 25, 26, 28, 29, and 30

* Less than 20 employees

** 20 or more employees

ABSTRACT OF INVESTIGATION

Date: September 2, 1988

Slide Number: 19 (Fatal Case Number: 33)
Accident Classification: Powered Haulage
Type of Mine: Coal - Surface of Underground
Location: Kentucky

Age of Victim: 53
Total Mining Experience: 23 years
Total Experience this Mine: 10 months
Total Experience this Job: 10 months
Number Employed at Mine: 17
Number Working at Time of Accident: 16
Time of Accident: 5:40 a.m.
Mining Height: N/A

About 15 minutes after the shift began, a general laborer was fatally injured when the upper half of his body was buried under approximately 2 feet of coal discharged from the stacker belt. For unknown reasons, the victim had walked beneath the coal conveyor stacker belts, and apparently did not hear the belts start up. A coworker had observed the victim walking about 30 feet from the accident prior to the starting of the belt. A truck driver discovered the victim approximately 10 minutes after the belts were started.

Means of Prevention: Instruct all employees to pay close attention to work areas, particularly the stacker belt area.

ABSTRACT OF INVESTIGATION

Date: September 16, 1988

Slide Number: 20 (Fatal Case Number: 35)
Accident Classification: Powered Haulage
Type of Mine: Coal - Surface of Underground
Location: West Virginia

Age of Victim: 28
Total Mining Experience: 5 years
Total Experience this Mine: 7 weeks
Total Experience this Job: 7 weeks
Number Employed at Mine: 43
Number Working at Time of Accident: 25
Time of Accident: 3:00 p.m.
Mining Height: N/A

A truck driver was fatally injured when he lost control of his truck while descending a 9 to 14 percent grade. The victim jumped out of the truck and was run over by the trailer. It had been raining the day of the accident, and it was the practice of this operation to scrape the haulage roads after each rain. The victim commented over his CB radio that the road was slick. The victim was discovered lying on the haulage road and the truck was approximately 50 feet over a hill. It was found that the haulage road bed had been scraped away and had become slick from the dirt base. It was also determined that the trailer brakes were out of adjustment.

Means of Prevention: A road bed should be repaired, not totally scraped away. Brakes should be maintained in proper operating condition.

ABSTRACT OF INVESTIGATION

Date: October 1, 1988

Slide Number: 21 (Fatal Case Number: 38)
Accident Classification: Powered Haulage
Type of Mine: Coal - Underground
Location: Kentucky

Age of Victim: 26
Total Mining Experience: 2-1/2 years
Total Experience this Mine: 5 weeks
Total Experience this Job: 5 weeks
Number Employed at Mine: 22
Number Working at Time of Accident: 7
Time of Accident: 9:00 p.m.
Mining Height: 63 inches

A battery scoop operator was fatally injured while operating a Model 21-SCB Joy shuttle car. He had relieved the shuttle car operator for lunch. The victim was enroute to the No. 7 entry, right crosscut, to get a load of coal. As he was tramming through the crosscut between the No. 5 and No. 6 entry, he extended his head outside the operator's compartment and was caught between the right rib of the crosscut and the canopy of the shuttle car.

Means of Prevention: Sufficiently extend the width of the canopy of operator's deck so that the operator cannot get caught by leaning out of the confines of the deck. A second option would be to install a cab on the operator's deck in order to prevent the operator from leaning out of the deck.

ABSTRACT OF INVESTIGATION

Date: October 23, 1988

Slide Number: 22 (Fatal Case Number: 41)
Accident Classification: Powered Haulage
Type of Mine: Coal - Underground
Location: West Virginia

Age of Victim: 28
Total Mining Experience: 7 years
Total Experience this Mine: 8 months
Total Experience this Job: 16 months
Number Employed at Mine: 85
Number Working at Time of Accident: Unknown
Time of Accident: 11:00 p.m.
Mining Height: 10 feet

A supply motorman was fatally injured while pushing a loaded supply car into the mine using a battery-powered manbus. As the manbus and supply car descended a 370 feet, 2 to 7 percent grade, the victim locked one set of brakes. Although there were no witnesses, it is assumed that when he became aware of a motor parked at the bottom of the grade, he moved forward across the manbus and supply car to attempt to couple the supply car to the parked motor. Apparently the speed had built up more than he had thought, and the impact threw the victim off the supply car. He was run over by the car.

Means of Prevention: Install automatic couplers on all supply cars and motors.

ABSTRACT OF INVESTIGATION

Date: November 3, 1988

Slide Number: 23 (Fatal Case Number: 44)
Accident Classification: Powered Haulage
Type of Mine: Coal - Underground
Location: Pennsylvania

Age of Victim: 36
Total Mining Experience: 18 years
Total Experience this Mine: 9 years
Total Experience this Job: 3 years
Number Employed at Mine: 876
Number Working at Time of Accident: 226
Time of Accident: 4:55 a.m.
Mining Height: 52 inches

A general inside laborer was fatally injured when he was apparently struck in the chest by the boom of a track mounted loader that was parked at the end of the 6-north track. At the time of the accident, the victim was working as a fire boss, and was making the fire boss run. When he did not exit the mine at the usual time, the mine foreman went back into the mine and found him in the track/trolley jeep he had been operating.

Means of Prevention: No equipment, supply car, or other type of track mounted equipment, which has extruding parts or supplies, shall be parked without a dead block or similar device being placed in or on the track to prevent a person from running into or under that part.

ABSTRACT OF INVESTIGATION

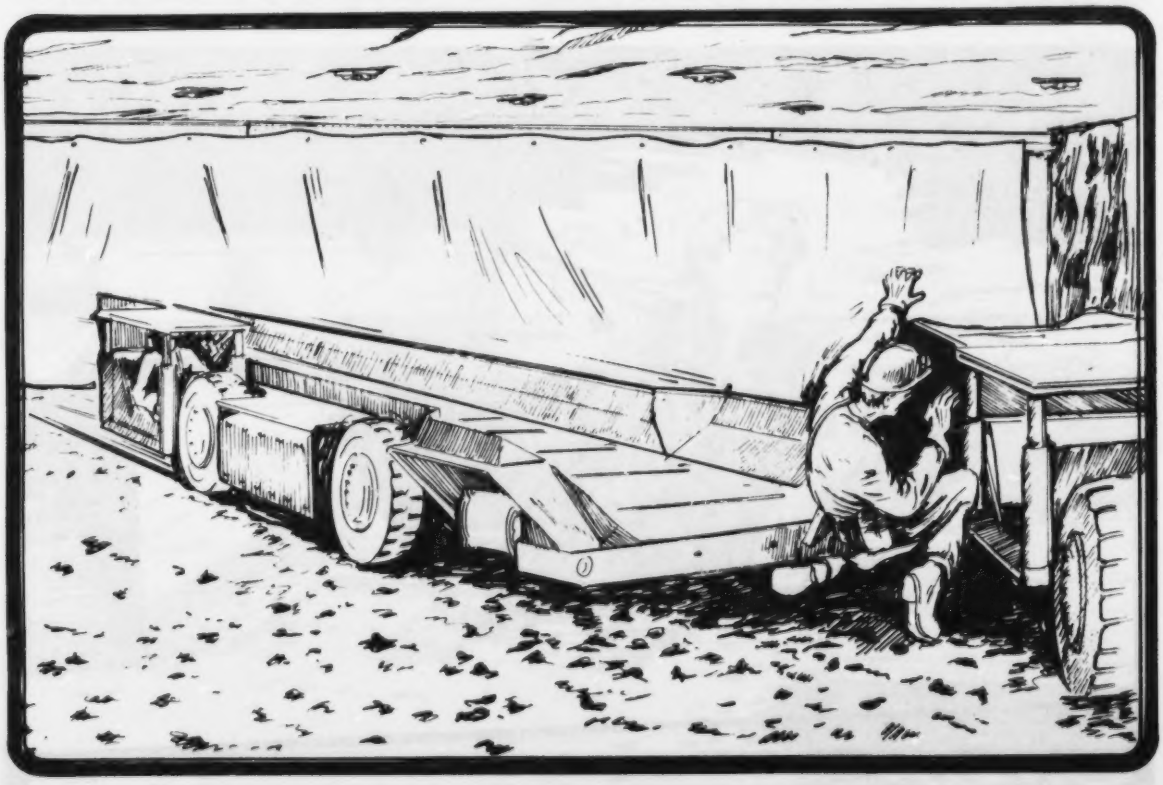
Date: December 18, 1988

Slide Number: 24 (Fatal Case Number: 52)
Accident Classification: Powered Haulage
Type of Mine: Coal - Underground
Location: Kentucky

Age of Victim: 43
Total Mining Experience: 16-1/2 years
Total Experience this Mine: 16-1/2 years
Total Experience this Job: 7 years
Number Employed at Mine: 274
Number Working at Time of Accident: 95
Time of Accident: 1:35 a.m.
Mining Height: 61 inches

A shuttle car operator was fatally injured while operating a shuttle car in the last crosscut of the No. 2 entry. A second shuttle car proceeded through the check curtain and struck the victim.

Means of Prevention: Ring the bell on the shuttle car before going through fly pad or check curtains. Also stop at checks or fly pads and listen to determine if equipment or someone is on the other side.



ABSTRACT OF INVESTIGATION

Date: September 26, 1988

Slide Number: 25 (Fatal Case Number: 36)
Accident Classification: Roof Fall
Type of Mine: Coal - Underground
Location: Virginia

Age of Victim: 27
Total Mining Experience: 6 years
Total Experience this Mine: 4 months
Total Experience this Job: 4 months
Number Employed at Mine: 20
Number Working at Time of Accident: 7
Time of Accident: 4:40 p.m.
Mining Height: 36-40 inches

A roof bolting machine operator was drilling the second roof bolt hole in the number 3 entry face area. A massive section of roof, measuring 2 foot by 59 foot by 7 foot, began to fall near the face. The roof bolting machine operator attempted to escape the area, but was caught near the edge of the fall and was fatally injured. The roof bolting machine did not have an ATRS.

Means of Prevention: Provide an ATRS for roof bolting machines.

ABSTRACT OF INVESTIGATION

Date: October 25, 1988

Slide Number: 26 (Fatal Case Number: 43)
Accident Classification: Roof Fall
Type of Mine: Coal - Underground
Location: West Virginia

Age of Victim: 33
Total Mining Experience: 13 years
Total Experience this Mine: 1 year
Total Experience this Job: 1 year
Number Employed at Mine: 110
Number Working at Time of Accident: 40
Time of Accident: 12:15 a.m.
Mining Height: 6-1/2 feet

A continuous mining machine operator was fatally injured when struck by a piece of rock measuring 11 feet by 9 feet by 4 inches. After loading a shuttle car on the right side of the entry, the victim got off the machine and proceeded behind and around the machine, back toward the face on the off side of the machine. He apparently went inby the last row of permanent roof supports.

Means of Prevention: Do not go inby permanent roof supports except to set temporary supports.

ABSTRACT OF INVESTIGATION

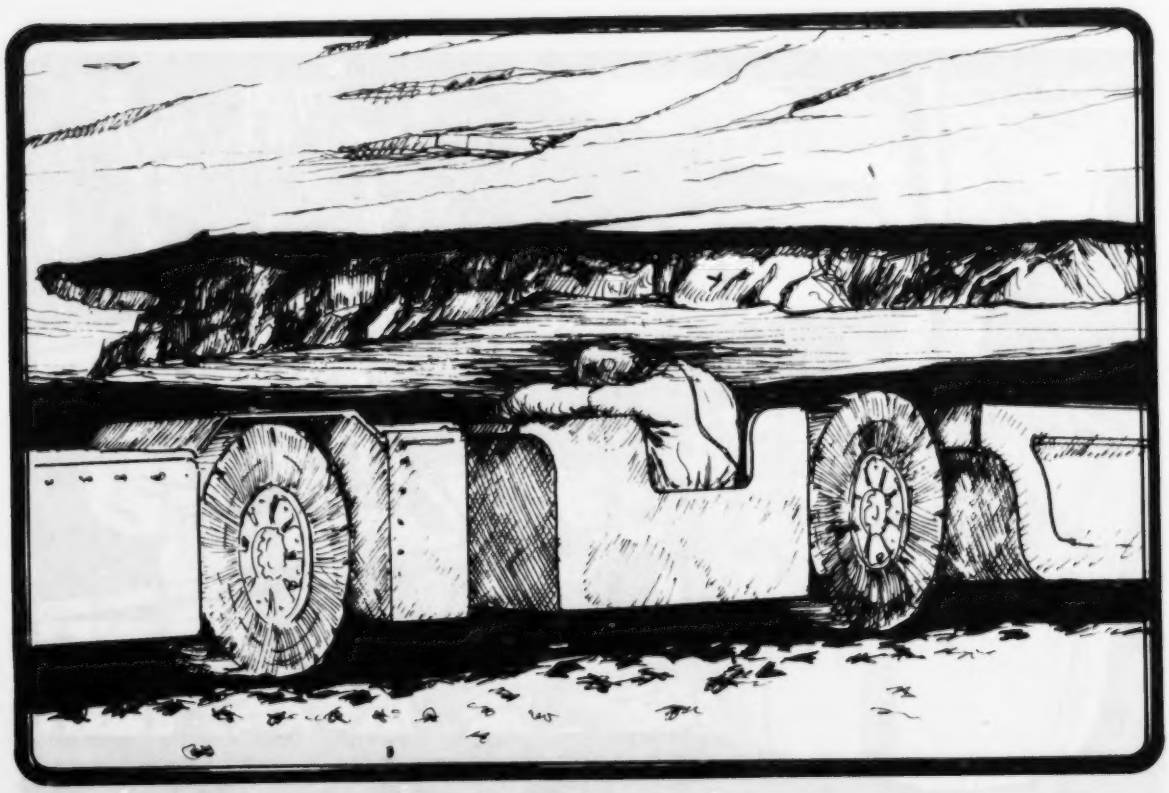
Date: December 5, 1988

Slide Number: 27 (Fatal Case Number: 49)
Accident Classification: Roof Fall
Type of Mine: Coal - Underground
Location: Kentucky

Age of Victim: 26
Total Mining Experience: 7 years
Total Experience this Mine: 5 months
Total Experience this Job: 5 months
Number Employed at Mine: 17
Number Working at Time of Accident: 16
Time of Accident: 10:48 a.m.
Mining Height: 38 inches

A battery scoop operator was loading coal into the bucket of a battery-powered scoop when he proceeded inby permanent roof support. While backing the scoop out of the place, a piece of roof measuring 5 feet by 3 feet by 8 inches feel striking the victim.

Means of Prevention: Do not go inby permanent roof support.



ABSTRACT OF INVESTIGATION

Date: August 9, 1988

Slide Number: 28 (Fatal Case Number: 31)
Accident Classification: Machinery
Type of Mine: Coal - Underground
Location: Utah

Age of Victim: 30
Total Mining Experience: 10 years, 9 months
Total Experience this Mine: 3 years, 2 months
Total Experience this Job: 3 weeks
Number Employed at Mine: 90
Number Working at Time of Accident: 27
Time of Accident: 9:20 p.m.
Mining Height: 4-14 feet

A roof bolting machine operator was fatally injured while installing a 6-foot roof bolt with a twin-boom roof bolting machine. While dislodging a second piece of drill steel, the victim raised the drill boom and his head was caught between the drill boom and the automated temporary roof support (ATRS).

Means of Prevention: Install means to enhance the worker's vision so that it will not be necessary to be in hazardous locations while operating a roof drill.

ABSTRACT OF INVESTIGATION

Date: December 13, 1988

Slide Number: 29 (Fatal Case Number: 50)
Accident Classification: Machinery
Type of Mine: Coal - Underground
Location: Kentucky

Age of Victim: 39
Total Mining Experience: 14 years
Total Experience this Mine: 9 years
Total Experience this Job: 9 years
Number Employed at Mine: 120
Number Working at Time of Accident: 26
Time of Accident: 12:59 a.m.
Mining Height: 48 inches

A general laborer was fatally injured while operating a radio remote controlled continuous miner. The miner was backing up on the right side of the place to clean up the cut when the miner power cable arm (standoff) struck the victim, crushing him against the right coal rib. There were no witnesses to the accident.

Means of Prevention: When tramming equipment from a remote location, always stay clear of machine.

ABSTRACT OF INVESTIGATION

Date: December 13, 1988

Slide Number: 30 (Fatal Case Number: 51)
Accident Classification: Fall of Highwall
Type of Mine: Coal - Surface of Underground
Location: Kentucky

Age of Victim: 31
Total Mining Experience: 4 years
Total Experience this Mine: 2 years
Total Experience this Job: 2 years
Number Employed at Mine: 160
Number Working at Time of Accident: N/A
Time of Accident: 6:20 p.m.
Mining Height: N/A

An outside laborer was working on a pump near a highwall when a rock fell, striking him. Freezing and thawing from the recent weather may have loosened the rock.

Means of Prevention: Highwall material should be scaled or a fence should be installed to protect miners from falls of material from highwalls.

ABSTRACT OF INVESTIGATION

Date: April 29, 1988

Slide Number: 31 (Fatal Case Number: 46)
Accident Classification: Other - Heart Attack
Type of Mine: Coal - Underground
Location: Pennsylvania

Age of Victim: 61
Total Mining Experience: 42 years
Total Experience this Mine: 19 years
Total Experience this Job: 19 years
Number Employed at Mine: 6
Number Working at Time of Accident: 2
Time of Accident: 6:30 p.m.
Mining Height: 54-66 inches

An Assistant Mine Foreman suffered a massive heart attack while in a dewatering pump area. Additional pipe had been installed to the pump's section line to remove more water from the sump area. As the water level lowered, a small opening into an abandoned area was exposed in a permanent stopping thereby permitting oxygen-deficient air to enter the sump area where the victim was working. The coroner's report indicated he died of natural causes. The oxygen-deficient atmosphere was a likely contributor to the heart attack.

Means of Prevention: When water is being pumped from an area where the water has backed up against permanent stoppings, the area should be approached with caution. A flame safety light or an oxygen detecting device should be used to check the atmosphere.